

CYANIDE

Chemical reference numbers (CAS) of common forms: Cyanide 57-12-5,
Zinc Cyanide 557-21-1, Sodium Cyanide 143-33-9, Potassium Cyanide 151-50-8,
Hydrogen Cyanide 74-90-8

WHAT IS CYANIDE?

Cyanide is very poisonous. Cyanide can exist as a gas, liquid or white crystal powder. Cyanide is used in the electroplating industry, in metal cleaning operations, and as an industrial bug killer. Breathing the gas, eating the liquid or solid forms can make people suddenly lose consciousness or cause death.

There are no common uses of cyanide in the home. Most cyanide in the environment results from industrial processes and from improper waste disposal.

HOW ARE PEOPLE EXPOSED TO CYANIDE?

Breathing: Cyanide gas can be found in industrial emissions and car exhaust, cigarette smoke and certain papers and plastics as they burn. It is also possible to breathe or eat cyanide dust when working with cyanide powder. If people use a contaminated water supply, they can breathe cyanide when they cook or shower with the water.

Drinking/Eating: Cyanide is sometimes found in contaminated drinking water. People can be exposed when they drink contaminated water. People who handle contaminated soil may be exposed when they eat or touch their mouths with dirty hands.

Touching: Cyanide can enter the body through skin when people handle the chemical, contaminated soil or contaminated water. People can be exposed to cyanide if they wash or bathe with contaminated water.

DO STANDARDS EXIST FOR REGULATING CYANIDE?

Water: The federal drinking water standard for cyanide is set at 200 parts per billion (ppb). We suggest you stop drinking water containing more than 200 ppb of cyanide.

Air: No standards exist for the amount of cyanide allowed in the air of homes. We use a formula to convert workplace limits to suggested home limits. Based on the formula, we recommend cyanide levels be no higher than 90 ppb. Most people can't smell cyanide until levels reach 600 ppb. Cyanide compounds smell like bitter almonds to some people, while others cannot smell them at all. If you can smell the chemical, the level is too high to be safe.

The Wisconsin Department of Natural Resources regulates the amount of cyanide that can be released by industries.

WILL EXPOSURE TO CYANIDE RESULT IN HARMFUL HEALTH EFFECTS?

The following health effects are described in cases of suicide or accidental exposure to high levels of cyanide compounds. These effects are not expected following low-dose exposures:

- Irritation of skin and mucous membranes (causing redness or flushing of skin)
- Headaches, dizziness and loss of coordination
- Nausea and vomiting
- Rapid, deep breathing or gasping
- Rapid pulse rate and increased blood pressure
- Muscle spasms and convulsions
- Loss of consciousness and death.

The following health effects can occur after several years of exposure to low levels of cyanide:

Cancer: No studies show a relationship between exposure to cyanide and the development of cancer.

Reproductive Effects: Studies of laboratory animals show exposure to cyanide resulted in birth defects.

Organ Systems: Cyanide can cause nerve damage affecting hearing, vision, and muscle coordination. Damage to the thyroid gland is also possible, resulting in changes of metabolism in adults and slowing growth or development in children.

In general, chemicals affect the same organ systems in all people who are exposed. A person's reaction depends on several things, including individual health, heredity, previous exposure to chemicals including medicines, and personal habits such as smoking or drinking.

It's also important to consider the length of exposure to the chemical; the amount of chemical exposure; and whether the chemical was inhaled, touched, or eaten.

CAN A MEDICAL TEST DETERMINE EXPOSURE TO CYANIDE?

Doctors can test urine for "thiocyanate" shortly after exposure to cyanide. Blood levels of cyanide can indicate recent exposure. Cigarette smokers generally have higher levels of cyanide-related compounds in their bodies than non-smokers.

Seek medical advice if you have any symptoms that you think may be related to chemical exposure.

This fact sheet summarizes information about this chemical and is not a complete listing of all possible effects. It does not refer to work exposure or emergency situations.

FOR MORE INFORMATION

- Poison Control Center, 800-815-8855
- Your local public health agency
- Division of Public Health, BEH, 1 West Wilson Street, Rm. 150, Madison, WI 53701-2659, (608) 266-1120 or Internet: <http://www.dhfs.state.wi.us/eh>



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